



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,962	03/31/2004	Seiichiro Sasaki	OKI 417	4886

7590 05/23/2006  
RABIN & BERDO, P.C.  
Suite 500  
1101 14th Street  
Washington, DC 20005

EXAMINER

SEMENENKO, YURIY

ART UNIT PAPER NUMBER

2841

DATE MAILED: 05/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/812,962

Applicant(s)

SASAKI ET AL.

Examiner

Yuriy Semenenko

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 8-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/10/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Affirmation of election is acknowledged. Applicants elect without traverse Group I Claims 1-7 drawn to a multilayered power supply line, as stated in response to Office Action filed on 3/09/2006. Claims 8-15 have been withdrawn from consideration. Claims 1- 15 are now pending in the application.

### ***Claim Objections***

2.1. Claims 2-7 are objected to for improper antecedent. Claims 2-7 recite the limitation " a multilayered power supply line " should be change to - the multilayered power supply line " for proper antecedent basis.

Appropriate correction is required.

2.2. Claim 1-7 are objected: before MIM applicant is required to state the full term " Metal - Insulator - Metal"

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3.1. Claims 1- 2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Takaramoto et al. (Patent # 6646860) hereinafter Takaramoto.

As to claim 1: Takaramoto discloses in Fig. 1A a multilayered power supply line (column 5, lines 33-42) having an MIM structure (column 5, lines 1-15), comprising: a first metal layer 28 that serves as a wiring metal (column 9, lines 39-66); a second metal layer 14 located below the first metal layer; and a third metal layer 26a (column 5, lines 14-16) that serves as a capacitor metal 12a, said third metal layer 26a being located between the first metal layer 28 and the second metal layer 14; wherein an insulator 12 is embedded into gap portions defined among these-metal layers, the second metal layer is electrically connected to the first metal layer and thereby supplied with power identical in potential to the first metal layer, and the third metal layer is electrically connected to the first metal layer and thereby supplied with the power identical in potential to the first metal layer, Fig. 1A and (column 5, lines 43-48).

As to claim 2: Takaramoto discloses in Fig. 1A a multilayered power supply line according to claim 1, wherein the second metal layer 14 and the third metal layer 26a are identical in potential to each other (column 5, lines 43-48).

As to claim 4: Takaramoto discloses in Fig. 1A a multilayered power supply line according to claim 2, wherein the first metal layer 28 is supplied with a ground potential, and the ground potential is supplied even to the second metal layer 14 and the third metal layer 26a, Fig. 1A.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2841

invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4.1. Claims 3 and 5-7 are rejected under 35U.S.C. 103(a) as being unpatentable over Takaramoto in view of Appel (PGPub # 2002/0113292) hereinafter Appel.

As to claim 3: Takaramoto discloses in Fig. 1A a multilayered power supply line according to claim 2, wherein the first metal layer 28 is supplied with a ground potential, and the ground potential is supplied even to the second metal layer 14 and the third metal layer 26a, Fig. 1A. Although, Takaramoto doesn't explicitly teach the first metal layer is supplied with a source potential of an external power supply, and the source potential of the external power supply is supplied even to the second metal and the third metal layer at time the invention was made, it was old and well-known to connect one terminal of capacitor or to source of potential and another connect to the ground or vice versa. And further, it has been held to be within the general skill of a worker in the art to make plural parts unitary as matter of obvious engineering choice, *In re Larson*, 144 USPTQ 347 (CCPA 1965); *In re Lockart*, 90 USPQ 214 (CCPA 1951).

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Takaramoto to include in his invention the first metal layer is supplied with a source potential of an external power supply, and the source potential of the external power supply is supplied even to the second metal and the third metal layer to provide options for connecting capacitors.

As to claim 5: Takaramoto discloses in Fig. 1A a multilayered power supply line according to claim 1, which includes metal layer 16a supplied with the source potential of the external power supply 30 and metal layer 20 supplied with the ground potential both of which are alternately disposed in the first metal layer (column 9, lines 39-66) and has capacitor 12a configured in potential different positions between the first metal layer 28 and the second metal layer 14 and between the first metal layer 28, Fig. 10A and the third metal layer 70,

except, Takaramoto does not disclose metal layers supplied with the source potential and metal layers and metal layers supplied with the ground potential both of which are alternately disposed in the first metal layer.

Appel teaches that it is known to dispose alternately metal layers supplied with the source potential and metal layers and supplied with the ground potential both of which are alternately disposed in the first metal layer (page 2, [0025], [0026]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have metal layers supplied with the source potential and metal layers and metal layers supplied with the ground potential both of which are alternately disposed in the first metal layer because Appel suggests at Abstract that such structure increase capacitance for MIM.

As to claim 6: Takaramoto, as modified, discloses in Fig. 1A the multilayered power supply line, having all of the claimed features as discussed above with respect claim 5, further comprising: a first 3-layer multilayered power supply line having a second metal layer 68, Fig. 10A supplied with the ground potential and a third metal layer 48 supplied with the source potential of the external power supply, and a second 3-layer multilayered power supply line having a second metal layer 18a supplied with the source potential of the external power supply and a third metal layer 26a supplied with the ground potential. Although Takaramoto did not disclose a plurality of connected 3-layer multilayered power supply lines, Takaramoto teaches a first and second 3-layer multilayered power supply lines and so it is old and well known to a first and second 3-layer multilayered power supply line for the purpose of increasing the capacity. And

Art Unit: 2841

further, it has been held to be within the general skill of a worker in the art to make plural parts unitary as matter of obvious engineering choice, In re Larson, 144 USPTQ 347 (CCPA 1965); In re Lockart, 90 USPQ 214 (CCPA 1951). Further, it has been held In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) (Claims at issue were directed to a water-tight masonry structure .....The claimed water seal has a "web" which lies \*\* in the joint, and a plurality of "ribs" Although the reference did not disclose a plurality of ribs, the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced.).

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Takaramoto to include in his invention and a second 3-layer multilayered power supply for the purpose of increasing the capacity.

As to claim 7: Takaramoto, as modified, discloses the multilayered power supply line according to claim 5, which includes, in the first metal layer 28, a capacitor 12a, Fig. 1A a made up of a parasitic capacitance (column 3, lines 28-38) developed between a metal layer 22 supplied with the source potential of the external power supply 30 and a metal layer 24 supplied with the ground potential.

### ***Relevant Art***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chen et al. – US 7009832; Sano – US 6876059;

6.1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuriy Semenenko whose telephone number is (571) 272-6106. The examiner can normally be reached on 8:30am - 5:00pm.

6.2. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571)- 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2841

6.3. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

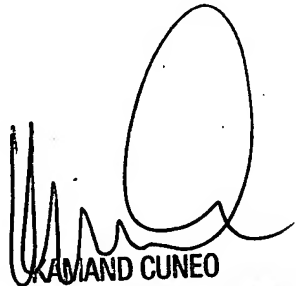
YS



Art Unit: 2841

6.3. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YS



KAMAND CUNEO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800